Quick Summary of Hovenweep GRI meeting
September 5-6, 2000

Summary
A geologic resources inventory scoping meeting was conducted on September 5-6, 2000 to discuss how to achieve the production of digital geologic maps for Hovenweep NM (HOVE) units (Square Tower, Holly, Horseshoe Hackberry, Cutthroat, Goodman Point and Cajon). Attendees included the HOVE superintendent, Geologic Resources Division, and GIS staff from MEVE and the Southeast Utah Group.

A geologic resources inventory workshop was held for Hovenweep NM (HOVE) on September 5-6, 2000 to view and discuss the park's geologic resources, to address the status of geologic mapping for compiling both paper and digital maps, and to assess resource management issues and needs. Cooperators from the NPS Geologic Resources Division (GRD), Natural Resources Information Division (NRID), NPS Hovenweep NM, Mesa Verde NP and Southeast Utah Group were present for the two-day workshop.

Day one involved a half-day scoping session to present overviews of the NPS Inventory and Monitoring (I&M) program, the Geologic Resources Division, and the on going Geologic Resources Inventory (GRI) for Colorado and Utah.

Day two involved a half-day field trip to view the geology of the Hovenweep Square Tower Unit led by Palma Wilson.

Round table discussions involving geologic issues for Hovenweep NM included interpretation, paleontologic resources, and the status of geologic mapping efforts, sources of available data, geologic hazards, and action items generated from this meeting. Brief summaries follow.

Attendees:
Palma Wilson (HOVE Superintendent)
Tim Connors (Geologic Resources Division-GRI_
Steve Fryer (Natural Resources Information Division)
Anne Poole (MEVE-GIS)
Allan Loy (MEVE-GIS)
Gery Wakefield (SEUG-GIS)

Items of discussion included the following:

ProCite database:
Palma Wilson was not aware of a ProCite database for HOVE, but others thought that it could be found in the Colorado Plateau 1994 data that Allan Loy mentioned; needs follow-up.

Geologic Mapping:
The new "Canyon of the Ancients NM" may have new geologic mapping being initiated

by the BLM; needs follow-up with local BLM to see if they are producing digital geologic maps of the area and could merge with NPS GRI project.

Anne Poole will be revising the 1950's vintage photo-geologic maps of R.J. Hackman that were never "field-truthed" with field checks to the various HOVE units. Permission will need to be obtained from the superintendent of Canyons of the Ancients (Anasazi Heritage Center at 970-882-4811) for the Colorado portion, and from the BLM's Monticello Office for the Utah portion (Kent Walters at 435-587-1500).

Anne's main concern is distinguishing the Jurassic Morrison Formation members from the overlying Cretaceous rocks (Burro Canyon and Dakota Sandstone), as she doesn't feel like an expert in that area. Tim Connors has contacted Pete Peterson (USGS-Denver and Mesozoic geologist extraordinaire), who is amenable to working with Anne to give her a better grasp of the stratigraphy. He thought he would be in the area the first week of October and could meet with Anne at that time. More to come when Pete returns from field work.

Anne estimated approximately six months to complete map products (digital finished product) for HOVE.

USGS Map I-629 (the Cortez quadrangle) has a scale of 1:250,000 and does encompass all HOVE units, but its small scale has shortcomings that 1:24,000 scale mapping enhances.

Digital Geologic Map coverage:
Once the field geology is verified, Anne will be digitizing the entire quadrangles that encompass the HOVE units. She already has four of the quadrangles scanned, rectified and ready for digitization. The others will need to be obtained as topographic maps.

The only units not covered under the Hackman Photo-geologic maps are Goodman Point and Cutthroat. It was also suggested to map the Woods Canyon for continuity and for regional geologic implications. The Square Tower and Cajon units reside in Utah; all the rest are in Colorado.

Quadrangle	HOVE unit
Aneth 1 (aka. Ruin Point)	Square Tower, Holly and Horseshoe Hackberry
Aneth 7 (aka. Navajo Canyon)	Cajon
Negro Canyon	Cutthroat Unit (approximately 14 acres)
Arriola	Goodman Point (1/4 section)
Woods Canyon	none

Paleontology:
Vince Santucci (NPS-FOBU) has indentified paleontological sites within the HOVE units, and needs consulted for this information. It was suggested that a paleontological

survey, much like the one being conducted for ARCH, should be done for the HOVE units.

Other GIS data:
Allan Loy is interested in finding out if 10 meter DEM's (digital elevation models) exist for the area; needs follow-up with NRID. It was suggested that Kerry Mich (Intermountain region GIS, Albuquerque) may have some information on this.

Anne Poole is also interested in locating aerial photography used to map vegetation, as it could be useful in mapping the geology; needs follow-up (Mike Story - NRID ??)

Palma Wilson is going to check with San Juan County on their soil mapping activities in the area; needs follow-up.

Interpretation:
During the site visit to the Square Tower unit, Tim Connors suggested that a pamphlet be developed talking about the geology of HOVE along the trail, as the park has a strong geologic component as well as cultural. Tim will attempt to write something up for the park to use to interpret the importance of geology to the HOVE story.

Miscellaneous:
When Anne Poole comes to map, she will need to be in NPS uniform or have the accompaniment of an NPS ranger to avoid conflicts with locals and visitors.

Anne is also interesed in seeing about the availability of park housing while she is mapping the area to cut down on travel time and such; needs follow-up.

The Square Tower boulder foundation has been shown to be eroding and threatening the resource. A report was written on this problem and should be incorporated into a final geologic report on HOVE. Mary Griffitts served as a consultant on this project where the boulders were injected to slow the erosional process. GRD staff were given a copy of the report during the meeting.

Water quality in the area is of concern because of the numerous seeps along geologic units.